The MAC Flyer

OCTOBER 1974

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The MAC Flyer

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in MAC Air Operations

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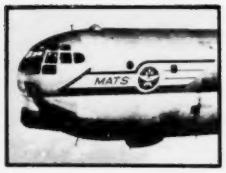

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Back in the late forties, this forerunner of Shakey signaled the beginnings of heavy lift transports.

A Queen of the Sky

by Mr. Cecil L. Reynolds, MAC/CSH

The jet transport superstars of today, the C-141, C-9, and C-5, which began flying MAC missions in 1964, 1968, and 1969, respectively, are just as familiar to Air Force fliers as national sports heroes. However, who can name the major propeller-driven transporters of the late 40s and early 50s, those predecessors of today's jet airlift?

For instance, how many of you are familiar with MAC's C-74? Who recalls that the C-74, identified as the "Globemaster I," featured prominently in worldwide airlift a quarter of a century ago, and was the only USAF aircraft of this type? It was the forerunner of the C-124, which entered MATS active service in 1950.

Not long ago the MAC Historian received a request from a woman who had worked at Brookley AFB, Mobile, Ala., in the early 1950s. She asked for a photograph and other verification of the existence of this aircraft. She wanted to prove to her acquaintenances (some of them were Air Force personnel) that there had once existed an aircraft designated the C-74!

A photograph of the C-74 on the cover of the June 1974 issue of THE MAC FLYER prompted readers to ask, "What kind of aircraft is that?" Photographs accompanying this article give several views of this interesting and productive MATS aircraft of more than two decades ago.

The C-74 was a four-engine, propeller-driven, heavy passenger-cargo transport built by the Douglas Aircraft Corporation. It could carry 125 troops, 109 litters, or 49,000 pounds of cargo. It was powered by four Pratt and Whitney R4360-49 engines each rated at 3,000 horsepower. It cruised at 200 m.p.h. Its wing span was 173 feet, 3 inches, and

A Queen of the Sky

A C-74, in background, with Old Shakey.

its length was 124 feet, 2 inches. A built-in freight elevator was capable of lifting 8,000 pounds in 25 seconds from the ground to the main cabin. A fixed hoist allowed lifting through a side cargo door.

The C-74 was striking in appearance. Mr. Raymond H. Hurn, a retired USAF pilot (now a civilian with the 375 AAW, Scott AFB, Ill.) flew ferry and air evac missions in it in the early 1950s. He described the C-74 as a large, high aircraft. The bottom of its fuselage was about 11 feet from the ground. The external bubbles on its nose gave it a huge, buglike appearance. These bubbles on early models separated the pilot and copilot, who had to communicate with each other via intercom.

Mr. Eugene P. Pitts, a veteran of C-74s, now retired from the Air Force and an FAA specialist at Will Rogers World Airport, Okla., spoke well of the C-74. He called it "a great aircraft" and said that it had range and lift capability far superior to any aircraft of its day.

The first C-74 was delivered in 1946 to Morrison Field, Fla., and assigned to the 1701st Air Transport Group (Atlantic Division, Air Transport Command) for operational testing. At Brookley AFB, which was the center of C-74 operations, the aircraft were assigned to the 6th Air Transport Squadron of the 1703d Air Transport Group (Continental Division, ATC), the organization responsible for service testing the aircraft. As a matter of interest, ATC became MATS on 1 June 1948 and MATS became MAC on 1 January 1966.

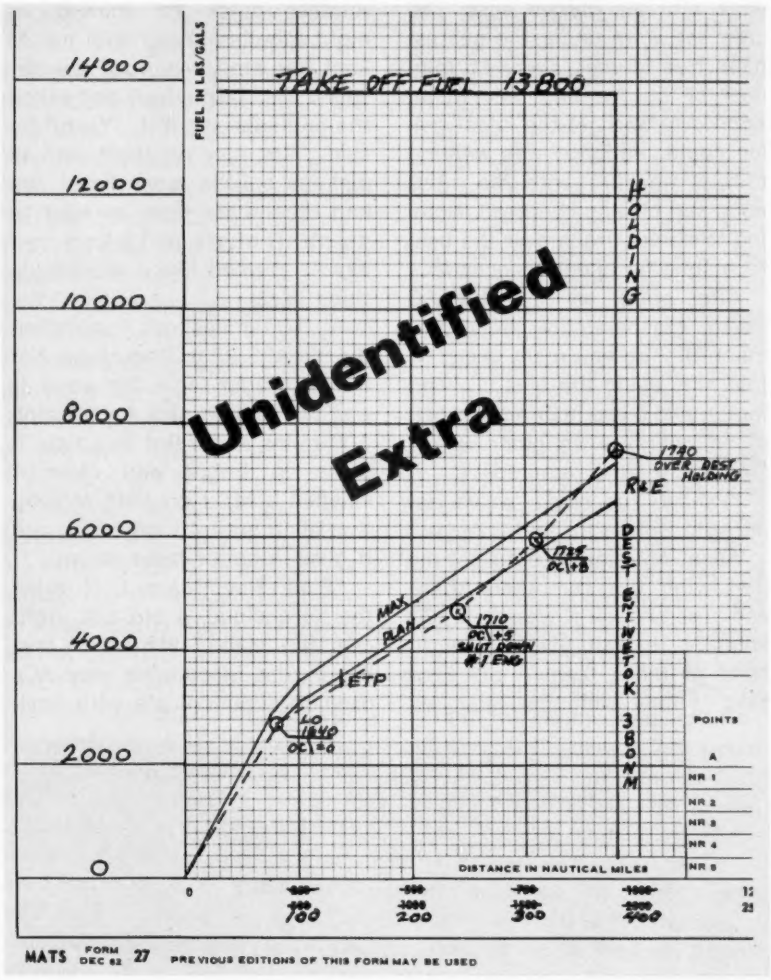
Records indicate that fourteen C-74s were built. Two were purposely destroyed in tests, and one became a prototype of the C-124. Eleven were assigned to MATS. It was a versatile transport aircraft used for flying cargo, passengers, and air evac patients, world-wide. It flew one Berlin Airlift mission, moving 25 tons of flour into Berlin. It began flying in 1946 and its last scheduled flight was in November 1955. Maintenance and parts problems resulted in low in-commission rates, and the aircraft was ordered into flyable storage on 1 November 1955. The last C-74 was transferred from MATS in March 1956.

In its nine years in airlift operations, the C-74 established an enviable record. It logged approximately 100,000 flying hours and flew about 21,000,000 miles. There were no crashes, no accidents due to pilot error, no fatalities, and no serious personnel injuries in the operation of the C-74. Of the 11 aircraft assigned to MATS, 11 were retired! It's difficult to argue with the effectiveness of an aircraft like that.

ABOUT THE AUTHOR

Mr. Reynolds is a former Air Force officer, retiring in 1960. From 1946 until 1949 he headed the USAFE historical program. Since 1967 Mr. Reynolds has worked in the Office of MAC History, Scott AFB, Ill.

Honorable Mention Winner 1974 Writing Contest



A refueling hitch keys a sequence of events that raises the pucker coefficient of an unsuspecting crew.

by Maj William F. Schroder,
76 MAS, Charleston AFB, S.C.

How many of you guys remember the atomic tests on Eniwetok in the late 50s? MAC (it was MATS in those days) had a big role to play. After each shot, a specially modified high flyer (U-2 or B-57) would, after a suitable interval, fly through the mushroom and collect particle samples. The samples were quickly brought back to "Wetok" and placed aboard a MATS C-97 for return to the States. It was a big operation. At times up to 80 percent of the West Coast C-97 fleet was committed to the bomb test mission. I was a budding navigator at the time on my first operational assignment to the 75th ATS at Travis AFB.

The operation then, as now, placed safety first, but even so, we did have our clutch moments. The recent concern about fuel reminded me of a mission which involved me back in those days. We were staging westbound out of Hickam. Some of the westbound missions were tough because of a required en route stop at Kwajalein. We don't go down that way very often now, so perhaps a quick glance at a map of the Pacific will give you some idea of the crew duty day involved. And remember, the old Boeing "Tri-Motor" only managed to squeeze out about 220 true.

The worst part was the refueling operation at Kwaj. It was, of course, an over the wing job. The refueling gang wasn't really geared to refuel a big airplane on short stops. They would drive up smartly with a fuel wagon and unwind what looked like a used half-inch garden hose. They were an eager bunch, and probably didn't understand the crew's glum expression as we faced a three or four hour "mill around check list." By that time we had flown a

Unidentified Extra

ten or twelve hour flight and faced another two or two and a half hours to Eniwetok. Ah well, you have to take the bitter with the sweet, right?

In those days the Nav would whip out a well-thumbed fuel manual, do some funny things on a graph, mumble a lot, come up with the minimum ramp fuel required, and then add a bunch for grandma, mom, and the kids. You just didn't feel comfortable without a healthy number in "Unidentified Extra." On this occasion the weather guy had a lot to say about a small typhoon well to the south of course. "You'll love this," he explained, "because it's so far south you shouldn't have much trouble with towering CUs, but it will give you about a 60 knot tailwind all the way." (Remember, at 220 true, 60 knots, percentagewise, is a bunch). Naturally, I built the manual flight plan (the only kind available then) based on the plus 60, and then, for fuel, added a bunch for Grandma, etc. We finished the paper work and departed for the local low-level grease replenishment snack bar.

Meanwhile, out on the ramp, the ground crowd proceeded with the refueling operation. An hour later we ambled out. They were still denting the wing leading edge with the garden hose. The crew sat down under the nearest palm tree to wait. Every 15 minutes or so the engineer would stroll over and get the latest gallon count. Patience was wearing thin. It was hot, with the afternoon sun blazing overhead. Nothing to do but argue over the best technique for opening coconuts.

After about an hour the AC asked, exasperatedly, "Nav, how much fuel do you really want?" I told him, using the plus 60 wind factor, and a two hour hold in lieu of an alternate. In other words, "minimum ramp required."

"Pshaw," he said, "we've got enough. Button up and let's go."

About 45 minutes out I got my first wind (no computers then) and sure enough it was there, 70 knots on the tail, five minutes ahead of flight plan. A piece of cake. Fifteen minutes later we shut down number one. It had belched once or twice, and a quick scan of the ignition analyzer revealed several shorted secondaries. No biggee, we had just passed ETP. We pressed on. Another quick fix showed us eight minutes ahead with an 80 knot tail wind. I noticed our airspeed was a little high and asked the engineer about it. "Yeah," he said, "I'm running them rich to pick up a little more time." We had little more than an hour to go, plenty of gas, and a long crew day. It seemed like a reasonable thing to do.

At 100 miles out I switched the old APS 42 to long range. Not the best radar set in the world. It was unusual to pick up an atoll 100 miles away. But this time it came in bright and clear. I smelled a rat. I couldn't pick up Kwajalein until 40 miles out, and it gives a better radar return.

"Pilot, Nav," says I, "I think there's a cloud, a big one, right over the island." "Mmmm," says he, in the inscrutable way ACs used to communicate with navi-

gators. A few minutes later, contact with approach control confirmed my suspicion. At the time, vis was good. There were towering CUs south of the island, and strong and gusty winds, but right down the runway. We started a descent.

Well, you get the picture. By the time we got there the clouds had gotten themselves organized and were right over the island. The field was still above minimums — in rain and gusty winds. We started an ADF approach — the only kind they had. On final, about a mile and a half out, the world closed in. We went zero-zero. The AC called for max power for a missed approach. That took us right up into the biggest, blackest, lightning-loaded bumper I've ever experienced before or since.

"Nav, get me out of here," the AC cried! My scope showed nothing but a white blur around the center. The storm was so intense no radar energy was getting very far out before it all came back. St. Elmo put on a big show, but Thor kept up-staging him. I called out a heading of 360 degrees. We broke clear and contacted tower for a weather report.

The tower operator stated it was a fast-moving storm and advised that we go to the fix and hold until it passed. We held for about 45 minutes and called for another reading. Well, it seems it was a fast moving storm until it got to the island, and then it stopped. It was raining pretty hard, but the ceiling and vis were still above minimums, and the wind wasn't too bad. Besides the sun was setting. It would be dark in 30 minutes. We decided to make another approach.

This time, on final, everything looked great until the tower called and advised us to land 3000 feet down the runway. Why? Because 18 inches of water covered the first 3000 feet of runway! The AC thought he could handle that until the windshield wiper on his side went bonkers. The blade rotated 90 degrees, and he couldn't see beans. Max power! Back up into fun city. We struggled back to the fix for some more serious thinking.

The boss decided to go back to Kwaj. After a struggle I managed to tone my voice down to a high-pitched squeek to say, "We don't have enough gas to go to Kwaj." Running rich with one caged, 45 minutes of holding, two missed approaches at max power, and, most important, a minus 75 knot wind factor facing us, we were committed. The AC persisted. Perhaps some of the older types remember something we called the "Tyson effect." Nothing more than getting down on the deck and using ground effect to increase range. That, of course, is applicable to a recip, not a jet. Anyway that is what we started to do until the engineer advised that not even the Tyson effect would give us enough range. What we needed was the "JC effect." Besides, no one was amused by what looked like ocean spray on the windscreen. We climbed back up and returned to the beacon.

Well, to tie up the tale, I don't know how the old boy did it, but we landed safely at Eniwetok, in a blinding thunderstorm, at night, one caged, no rain removal on the left side, on a runway that was half sunk. I think my activation of the HSR (High Speed Rosary) had something to do with it. The point of all this, though, is Fuel! Fuel! Fuel! There is not much you can do about perverse thunderstorms and poor terminal conditions, but there is plenty you can do to keep yourself out of the box.

No one really has to be told, "Don't leave without enough gas" or "Don't waste it en route to pick up a few minutes." However, as we all are behind the effort to beat the fuel crisis, it may be a good idea to remind each other to "Yield not to Temptation." There is no real necessity for those big numbers in "Unidentified Extra." But make sure the numbers in the other boxes are big enough, and most important, based on realistic contingencies. On those few occasions when you do have "extra," then plan on landing with it. Not only will it reduce the next refueling requirement, but you may find that when you get to "gear down, before landing check list" time, it's not "Unidentified Extra" at all.

ABOUT THE AUTHOR

Major Schroder began his Air Force career 19 years ago and has accumulated over 8,000 hours as a navigator in C-97, C-124, C-130, C-135, and C-141 aircraft. He has also served as a Minuteman missile crew commander with the Strategic Air Command and completed an AFIT tour at the University of Wyoming. His experience covers a broad spectrum of tactical and strategic airlift operations during a period of rapid growth and change in the MAC mission.

Capt Rhoades and Crew

MILITARY AIRLIFT COMMAND

GOOD SHOW

Left to right: TSgt Ronald R. Carr, flight engineer; Capt Thomas G. Ritz, copilot; Capt Rhoades, aircraft commander; 1st Lt Alfred P. McCracken, copilot; 1st Lt Thomas C. W. Keitel, copilot; and TSgt Charles H. Sitzenstock, flight engineer.

While on a local instrument training mission at McGuire AFB, N.J., Capt Rhoades' C-141 developed severe flight control problems while operating at 3,000 feet. Lt McCracken, who was flying the aircraft at the time, started a left turn and discovered that the aircraft would not respond to normal control procedures. He attempted to arrest the left bank but it increased in spite of opposite aileron movement. As left bank passed 40 degrees, Capt Rhoades, an instructor pilot, took control of the aircraft and immediately applied corrective control inputs. Applying full right rudder with maximum trim, full right aileron with maximum trim, maximum power on numbers one and two engines, and idle power on three and four, he regained aircraft control at 2,000 feet in a right skidding turn. Marginal aircraft stability and adverse control pressures required maximum physical exertion on the controls to maintain control.

While Lt Keitel, a third pilot aboard, checked empennage controls through the periscopic sextant, TSgt Sitzenstock, one of the flight engineers, scanned the wings from the main cabin and reported both ailerons in the down position. Capt Rhoades performed aileron control checks that verified the right aileron was frozen in the full down position.

Capt Ritz, the only other aircraft commander on the flight, replaced Lt McCracken at the controls, and for the remainder of the flight Capt Rhoades and Capt Ritz alternated at the extremely fatiguing job of controlling the aircraft. Meanwhile, the crew declared an emergency and requested immediate assistance through Conference Skyhook. For the next hour and a half the crew researched technical orders, checked aircraft systems, and evaluated simulated landing profiles.

By this time, Conference Skyhook was in progress. A team of commanders, aircrew standardization and maintenance personnel, and Lockheed engineers analyzed the flight control problem and recommended a solution to restore flight control response. The crew followed the recommendation to hydraulically isolate the right aileron. They selected the right aileron "tab operable" on the overhead flight control, and positioned the toggle switch to this position. The right aileron finally broke free of its binding force.

Capt Rhoades flew radar vectors to the active runway and executed a successful approach and landing. Post-flight inspection revealed that a linkage bushing in the right aileron number one hydraulic system control valve had jammed.

The superior airmanship displayed by the crew during their two hour emergency is worthy of a hearty salute. "Good Show," Capts Rhoades and Ritz, 1st Lts McCracken and Keitel, and TSgts Carr and Sitzenstock, of the 30th MAS, McGuire AFB, N.J.

Mishaps with a Moral:

Dead Reckoning

Since the early days when the Wright Flyer hopscotched from sand dune to sand dune, volumes have been written about aircraft versus thunderstorms. Aviation chronicles repeatedly point out that in confrontations between aircraft and severe weather, aircraft usually come out second best. These aviation annals contain numerous accounts of aircraft that were consumed by nature's violence. Here are accounts of two recent flights checkmated by thunderstorms.

Dead Reckoning

About the time a twin-engine turboprop airliner settled onto the runway at an en route stop, an autumn cold front was triggering a line of severe buildups in the evening sky west of the airport. The next scheduled stop on the route of flight lay approximately 60 miles west — beyond a ballet of CBs boiling up to 50,000 feet.

The pilots discussed the weather picture with other pilots and used aircraft radar to examine the weather echoes. The crew detected what appeared to be a 15-mile-wide break in a line of echoes 35 miles on the 300 degree radial from the airport VORTAC.

Engines whining and the aircraft buttoned up, the captain steered the turboprop toward the active runway. He decided not to activate his computer stored flight plan. Instead, he contacted a nearby Flight Service Station and reported that he would proceed VFR to the next stop.

The twin turboprop took off and melted into the nocturnal space, silhouetted by fluorescent flashes of lightning against a backdrop of milky white cumulonimbus. Paralleling the line of buildups on a northeasterly heading, the two pilots focused their attention on the not-so-pretty picture on their radar scope. The break in the weather line painted earlier on the ground began to close. The cockpit voice recorder gave a vivid account of what transpired.

"That might not be a hole there," the pilot commented.

Looking at the scope, the copilot, who was flying the aircraft, replied, "We'll know shortly. It sorta looks like 24 miles to the end . . ."

"I don't care, just as long as we don't go through it," answered the captain.

"Looks a little strange through there; looks like something attenuating through there. It's a shadow," said the copilot.

* * *

"Wanna go around?" suggested the copilot.

"Yeah, why not."

"All right."

"I'd slow it up a little bit too," the captain directed.

Still searching for a break in the weather, the airliner continued on a northwesterly course. Interpreting returns from the radar scope, the captain provided heading information to the

copilot at the controls. Devoting considerable time and attention to the weather and radar returns, the crew attempted to keep track of their position but their navigation was intermittent and imprecise. The captain had a general idea of their position but didn't utilize all available VOR-TACs and radio beacons in the area to establish a precise position.

Nearly 20 minutes into the flight and still flying in a northwesterly direction, the copilot commented, "We don't want to get too far up, it gets hilly."

"Why don't you try 2,000? If we get up here anywhere near — we get in the mountains," suggested the captain.

"Uh, you reckon there's a ridge line along here somewhere? I'll go down 500 feet; you can see all kinda lights."

"All right. You can quit worrying about the mountains 'cause that'll clear everything over there."

Barely maintaining VFR, the turboprop skirted its way north around cloud bases and rain showers for approximately another five minutes. Aircraft navigation aids ceased to provide accurate course information due to distance and low altitude. But the radar hinted of a possible avenue through the weather. Closely observing radar returns, the copilot became somewhat uneasy.

"Paintin' ridges and everything else, boss, and I'm not familiar with the terrain. We're staying in the clouds."

"Yeah, I'd stay down. You're right in the base of the clouds. I tell you what, we're gonna be able to turn here in a minute," replied the captain.

"You wanna go through there?" asked the copilot.

"Yeah."

" All right. Good, looking good, Mac. Looking good."

Dashing in and out of rain showers and clouds, the aircraft closed the gap toward the most promising opportunity for penetration through the line of weather. Finally, the captain directed the turn.

"Start your turn — standard rate. Level out and let me see it when you hit 290 (degrees)."

"Aw, okay. There's your 290."

"Steady on. Should hit in about a half a mile. Should be out of it (weather) in 'bout two miles. You're in it. Are you through it? Turn 30 left."

"I can see the ground now. There's 30 left. Naw, that's 35..."

"Keep on truckin,' just keep on truckin'. Put, uh, about 265, heading 265."

The copilot acknowledged the new heading. About a minute later the captain ordered a descent.

" . . . descend to 2,000."

"Two thousand, coming down. Here we are; we're not out of it," observed the copilot.

"Let's truck on — 'bout five to the right. Shift over a little bit if you can."

Still uneasy about the terrain, the copilot remarked, "I'll be... Man, I wish I knew where we were so we'd have some idea of the general terrain around this place."

"I know what it is," remarked the captain.

"What?"

"The highest point out here is about 1,200 feet. The whole general area, and then we're not even where that is, I don't believe."

"I'll tell you what, as long as we travel northwest instead of west I still can't get Paris," complained the copilot. The remark was followed by several seconds of whistling by one of the pilots.

"Two hundred and fifty, we're about to pass over (VOR). You know where that is," questioned the copilot.

"Yeah."

"All right."

"About 180 degrees to Texarkana," replied the captain.

"About 152. Minimum en route altitude here is forty four hun..."

The copilot's statement was terminated by the sound of the aircraft's impact into a steep, heavily wooded slope 600 feet below the top of the ridge. There were no survivors.

Accident Analysis

The National Transportation Safety Board determined that the probable cause of this accident was the captain's attempt to operate the flight under visual flight rules in night instrument meteorological conditions without using all the navigational aids and information available to him, and his deviation from the preplanned route without adequate position information. The carrier did not monitor and control adequately the actions of the flight crew or the progress of the flight.

The captain's operational control and conduct of the flight were major factors in the accident. He deviated from the approved dispatch release without notifying the airline dispatcher of his decision to do so. Originally dispatched as an IFR flight, the captain decided to fly segments of the flight VFR.

The crew devoted considerable time and attention to the weather, observing it both visually and on radar. But there is no evidence that the captain kept track of the time flown or that he kept a dead reckoning position and related it to minimum en route altitude or terrain height.

The copilot made a number of comments that indicated his concern about the aircraft's position — the lack of information on terrain elevation and the weather through which they were flying. Near the end of the flight, the copilot apparently referred to an en route navigation chart. But this came too late, and while the copilot was warning the captain about the minimum en route altitude, the aircraft struck the mountain.

Hindsight is 20-20 and it's easy to point a condemning finger at a crew that allowed the operation of a flight to get so out of hand. But circumstances, situations, and the desire to get the job done sometimes distort judgment and lessons learned from experience. Hopefully, this mishap will stimulate some deep soul searching.

Adapted from the National Transportation Safety Board Report No. NTSB-AAR-74-4.

Delayed Call

In another weather related accident, a nonscheduled DC-7 cargo plane crashed into the Everglades shortly after takeoff from Miami International Airport. Three crewmen, the only people aboard the aircraft, were killed.

Throughout the predawn hours, severe thunderstorms with tops up to 50,000 feet peppered the area west of the airport. Weather stations in the Miami area alerted aircrews to approaching cells with special weather observations. Weather radarscope pictures showed a solid area of echoes extending westward from the airport to the Gulf of Mexico.

At 0420, the DC-7 taxied into position on runway 27 and the crew received takeoff clearance to which the copilot replied, "Rolling."

Tower then directed contact with Miami Departure Control. Two minutes after takeoff the copilot radioed Departure Control and the controller replied, "... Miami Departure, radar contact. Turn left, heading 110."

During the next 30 seconds, the copilot called Departure Control twice; each time the controller replied by repeating the left turn clearance. The copilot radioed tower and reported that he could not establish radio contact with Departure Control on the assigned frequency. The tower operator assigned the flight a different frequency and communications between the aircraft and Departure Control were established.

Four minutes after takeoff, the departure controller again cleared the flight for a left turn — this time to 100 degrees — and asked for the aircraft's altitude. The crew acknowledged the left turn and reported, ". . . at a thousand feet."

Observing the DC-7 radar blip turning right, the departure controller called, ". . . that was a heading of 100. I see you're turning northwest bound. Turn left. Turn left to 120, 120 please sir!"

For the next few moments, the controllers discussed the aircraft and noted that it was "... stumbling all over the sky. He's supposed to make a left turn; he made a right turn."

The departure controller concluded the discussion by saying, "I think we're going to go north with him, so protect him."

When the DC-7 crew did not reply, the departure controller called again.

The crew acknowledged this call and the controller stated, "Okay, the weather right up ahead of you there is . . . heavy."

Keying the aircraft microphone, the copilot replied, "Okay, . . . stand by here."

Immediately after the copilot's reply, the controller transmitted, "You want to keep it coming,... You want to keep it coming, right turn, or have you started a left turn now?"

The crew didn't acknowledge this transmission and there was no further communication with the flight.

The aircraft crashed into the swamp in a 70 degree nose-down and 70 degree left wing-down attitude, nearly nine miles west of the runway. The National Transportation Safety Board determined that the probable cause of the accident was the loss of aircraft control due either to turbulence or an in-flight fire, or both. Inability of the crew to establish timely radio contact with the departure controller was a factor because it delayed compliance with thunderstorm avoidance vectors.

The accident occurred during the hours of darkness. Although no one witnessed the crash, persons on the ground at the time of the crash described the extremely heavy rain, wind, and lightning as the most severe weather they could recall.

An aircraft's design, size, power, rate of climb, control response, and speed, may be impressive to aviation enthusiasts but compared to cumulus maximus these engineering facts are not so impressive. When an aircraft taxies into the batter's box and nature is pitching low inside curves of wind, heavy precip, and lightning, the only place for an aircraft is in the dugout.

Adapted from the National Transportation Safety Board Report No. NTSB-ARR-74-2.

It's well after midnight and all is calm on the ramp. A few dried leaves crackle here and there. Fan blades chatter as a chilling autumn breeze slowly revolves sleeping turbofans. A security police vehicle quietly circuits the ramp and stops at the ramp control shack. Moored on the ramp, two C-141s, a C-5, an HH-43, an HH-3, a T-39, a C-131 and two T-29s bathe beneath brilliant autumn moonlight.

Another icy gust out of the north bends aircraft warning streamers nearly horizontal.

"Aaachoooo!"

"God bless you. Sure turned cold all of a sudden. My rotor blades are shivering and I've got runny servos."

"Yeah, I'd give anything to have just one of my APUs on the line pumping warm air through my wheezy hydraulic service centers and chilled avionics bays. But we may as well get used to it. It's that time again when ole man winter makes life a little tougher," sighed the C-5.

"Winter ground and flying operations are tough enough but some crews will certainly make it doubly difficult for us older birds. My R-2800s aren't what they used to be and . . . "

"Say, Fred, do you hear anything. I thought I heard conversation coming from the ramp." One of two patrolling security policemen was speaking.

"Yeah, now that you mention it, I thought I heard talking, too. Let's go out and check the area," advised his companion.

The two men draped themselves in their parkas and exited their snug vehicle. I'll check the C-5 and the 141s and you check the other aircraft. We'll meet back here in ten minutes." They returned in less time than that.

"Did you find anything, Fred?"

"No, not a thing. The aircraft are all buttoned up and there's not a soul to be found. How about the birds you checked?"

"Everything's okay. There's not a rivet out of place and no sign of life anywhere.

"This is real weird. I would swear that I heard talking coming from somewhere around here."

"Me too, but everything's quiet. Maybe the airplanes were talking to each other."

"Very funny. Let's go back to the shack and pour ourselves a couple of cups of coffee. We'll check the ramp again later on."

The moon continued to play hide 'n seek with stratus clouds driven by stiff north winds.

"That was close. We're going to have to keep our conversations subdued," insisted the Jolly Green. The other aircraft whispered in agreement.

"Certainly turned cold suddenly. I figured we'd have another couple or three weeks of Indian summer before the first wintry blasts spilled out of Canada. Maybe it's a barometer of a long, harsh winter. I hope our maintenance and flight crews check their calendars and take the night's chill as a hint to prepare themselves for winter flight operations," emphasized one T-29.

"Most of my ground maintenance and flight crews took pretty good care of me last winter but I had a few anxious moments when some of them became complacent," voiced one Starlifter.

"It was pretty much the same for me. How about you others?" asked the nimble Sabreliner." They all paused and nodded in agreement.

The Starlifter continued, "With shorter periods of daylight, snow, ice, freezing rain, severe cold and the like, we all need more attention, especially on the ground, if we're going to stay in one piece. Unfortunately, we don't always get what we need. Some of the people responsible for maintenance don't prepare themselves properly for outside work. I've seen some of them wearing inadequate clothing, no headgear, and would you believe, no gloves. One sergeant changing a tire last February left a couple of layers of his palm on my coldsoaked shock strut. People must realize that they can't work summer schedules when it's 20 below. More time must be alloted for ground maintenance and preflight. Anyone working on us in such weather should bundle up in proper clothing and be prepared to spend more time with us before and after flight."

"And speaking of preflight," declared the Galaxy, "most of my cold weather difficulties last year occurred before I ever got off the ground. Man, I'm a hydraulic jungle with four hydraulic systems, multiple flight control power packs, hundreds of seals, a landing gear that swivels, kneels, twists, and folds, a huge visor door, and fore and aft ramps. I won't even mention my two jampacked avionics bays of precision nav and comm gear. But some people don't seem to realize my hydraulic and avionic components need to be warmed thoroughly and exercised before the wheel chocks are pulled. And if my coldsoaked components are not warmed up, I'll probably bust a hydraulic seal or two, split a line, or even rupture a manifold. After coldsoaking one night at Elmen-

If airplanes could talk, they'd have quite a few tales to tell — especially about winter operations.

by Capt A. R. Barbin, Associate Editor

Speaking of Winter

dorf last winter, without warming the upper flight deck, the crew applied electrical power to my AHRU units and inertial nav system. Well, the lubricants and tiny bearings couldn't hack it and my IMU and one AHRU quit. Spent another 48 hours there — NORS."

A shivering Starlifter interjected, "Warming up with an APU is super if your APU will start. I got stuck up at Eielson one night last year when the temperature dipped to 40 below. My crew dashed off to cozy quarters without removing my batteries. When it came time for preflight the next day, the engineer tried to start my APU but it was a bust. I had a good accumulator charge but an insufficient trickle of electrics for valve positioning and ignition. We got back to the East coast four days later."

"No one has said anything about frost, snow, and ice on our wings and empennage," hinted one of the older T-29s. "Such accumulations left on our surfaces can bust up any one of us on takeoff. It's like trying to fly with no wings. Some years ago, a good T-bird buddy of mine got a few feet in the air, stalled, and crashed. Unburned portions of the wing and tail still had over an eighth of an inch of frost on them. Looking at the frost on my own wings after he went in, I had a sinking feeling that frost and pilot negligence cost me a good ol' friend."

"I know what you mean," broke in the C-5. "After one all night snowfall, ground crews, cherry pickers, and deicer vehicles removed the six-inch blanket of snow from me — all except for my T-tail. Since my tail is 65 feet up, I guess the crews forgot about it or felt that it wasn't necessary to deice my horizontal stabilizer. On takeoff, I accelerated to my rotate speed, and my elevators deflected upward, but nothing happened. I rolled another 3,000 feet before getting airborne. Much of my stabilizer was in a stalled condition during the takeoff roll before the snow and slush finally blew off. Had it been colder, the snow and slush accumulations would have frozen fast to the stabilizer surface and — well, I hate to think of what would have happened."

"I really feel for you big fellas," commented a Jolly Green, drooping its rotors under the force of the cold wind. "I was much luckier in a similar situation. I remember once when we were taxiing out to the liftoff area, and I was having to produce more power than normal to taxi. My pilot shrugged it off. With 102 percent torque available and 72 percent required to hover in ground effect, the pilot pulled in the collective for my morning power check. He increased collective well past 85 percent, but I still couldn't hover. At 96 percent I started to tapdance from gear to gear, but I just couldn't

Speaking of Winter

hover worth a damn. He shut me down and maintenance troops climbed topside. They found my rotor blades were covered with frost. An hour later, with clean rotor blades, we went merrily on our way."

The T-39, the smallest member of the group, had been listening intently, his radome beginning to coldsoak in the bitter wind. He spoke up in a squeaky voice. "Don't forget, you guys, aircraft surfaces aren't the only places where ice, slush, and winter crud can cause us anxious moments. When bad weather is forecast, ground crews usually tow me into a snug hangar, but I'll never forget one winter when we RONed in a major Rocky Mountain blizzard. I was left out on the parking apron throughout the storm. It started out as freezing rain and eventually dumped 19 inches of snow, piling up ten-foot drifts. After the storm, I was a mess. Snow, frozen slush, and ice caked my gear wells, struts, micro switches, nose gear steering components, aileron and flap areas, and my static ports. About a day later, transient maintenance cleverly used a portable heater to rid me of this excess baggage while my pilots busied themselves in base ops. I felt pretty good but something nagged away — something wasn't right. An hour later, with my gear folded neatly away, I was banking gently to the west. Into the soup at 1,000 feet I suddenly realized my altimeters were in error. My God, my static ports are still plugged up with ice! A T-bird joined up later on and we flew his wing to a safe emergency return. Imagine those tiny plugged-up little holes causing so much heartburn."

A C-131, veteran of many air evac missions, spoke up. "Engine start is another area I think we should talk about. It's much harder to start us recip guys than you young lads with the turbines. In cold weather my oil congeals to a tar-like viscosity unless crews dilute my oil with proper amounts of avgas before leaving. Busted a starter shaft last year when my pistons couldn't push the congealed goo aside — pilot forgot to dilute."

"What's a piston," teased the Sabreliner.

"Aw, knock it off. Don't get no respect," blustered the Convair.

"C'mon, you guys, let's get back to business," scolded the domineering Galaxy.

"Sure, we guys with the stovepipes have an easier time starting," admitted the second Starlifter, "but our synthetic oil can also congeal. Unless our pilots allow a couple of minutes for oil temperatures to rise and pressures to stabilize in the normal range, we can rupture a seal or line and dump our lubricant all over the ramp."

"Engine anti-ice on during taxi is a good idea. I wish more pilots would turn it on when air is cold and moist — high humidity, fog, snow, wintery drizzle and the like. The venturi effect across my engine inlets cools and decreases air inlet pressure. Moisture condenses and freezes almost instantly. Rapid ice accumulations are possible and can ding-up my fan blades, guide vanes, compressor blades, and may lead to engine belches that pilots call compressor stalls," added the first Starlifter.

"Yeah, well, I've got a carburetor heat that does the same thing, but I don't think many of my former jet jockey pilots have discovered it yet," barked the T-29.

"Hey, Starlifter, I thought I recognized your tail number. Didn't you end up in a snow bank a year or so ago?" queried the C-5.

"Hey, you really know how to hurt a guy, but you're right. Spent nearly four hours lodged in a frigid blanket until a tug pulled me free. Blocking out 10 minutes late, my pilot, Capt Leadfoot, thought he could cut taxi time. Tower cautioned him about ice and hardpacked snow on the taxiways, but I guess the message didn't register. I knew I was going too fast to make the turn onto the parallel. Ole Leadfoot wheeled my nosewheel steering hard to the left and I lost my footing and started to skid. Leadfoot hit my brakes but we skidded straight ahead into a soft, fluffy snowbank. Luckily, none of me broke but I sure took a ribbing for a couple of weeks."

"That reminds me of the morning I taxied to the engine runup area before takeoff," added one of the T-29s. "My pilot parked with my right main and nose gear on ice. As he advanced my right engine to field barometric, we spun about 90 degrees almost instantly. He recovered and we tried again — on a dry runup patch."

"I'm glad I don't have to contend with long takeoff rolls through slush, snow, and the like," shuddered the Jolly Green. "I've watched many of you fixed wing guys slip 'n slide down the runway, throwing up rooster tails of icy crud. I don't know how you maintain directional control and get airborne through such mess."

"There have been times on takeoff when I would have gladly traded my fixed wings and turbofans for a set of your fling wings," conceded one of the Starlifters. "You outta try a slick runway with

a hefty crosswind sometime — not much fun. Some pilots don't realize that takeoff performance with partially frozen crud on the runway is hazardous and cannot be accurately computed. A few times I've consumed up to 40 percent more real estate than predicted on the TOLD card."

"Amen to that," voiced the Sabreliner.

"You know," grumbled the Galaxy in a gruff voice, "I wish pilots would leave my gear down for a minute or so after takeoff to let all that slop blow off. Retracting 28 wheels, positioning huge gear doors and gyrating all sorts of associated machinery is a real chore with hundreds of pounds of near-frozen yuk glued to every nook and cranny."

"Another thing," interrupted the Starlifter, "climbout through wintery soup could be a lot easier if pilots would turn on anti-ice equipment ahead of time. Carrying a couple of tons of unnecessary ice in a climb is not one of my favorite pastimes. I guess some of my drivers have misconceived ideas that my anti-icing gear is intended for ice elimination. It's not. My engine and wing anti-ice gear should be turned on ahead of suspected icing conditions — not afterward."

"Listen to the Starlifter bellyache," smirked the feisty Sabreliner. "We should have such problems. Some of us birds don't have wing or empennage anti-ice or deice gear. Man, if there's icing forecast on the climbout, we gotta hustle and get on top or between layers. We can't afford to linger around in ice. Same thing on descent — get right on down and minimize time in such inhospitable cloud decks."

"Humph, when icing conditions are forecast, I just don't go anywhere," bemoaned the HH-3 rescue helicopter.

"Me, too," spoke up the HH-43. The others considerately stifled their giggles.

"Back in the days of MATS when there were more Shakeys than snowflakes, everyone knew about carburetor ice. On Shakey, the flight engineer had the engines all to himself and knew the evils of induction icing. He might have carburetor heat on in cloudless skies with temperatures near 25 degrees C. These crusty flight engineers knew that conditions of high humidity could cause rapid ice buildups in the carburetor venturis of their throbbing 4360s. Most Shakeys have gone on to the great boneyard and their watchful crews on to other aircraft and other jobs. But induction icing still bothers us remaining recips. Like your anti-ice systems, carburetor heat in normally adequate to prevent icing, but it will not always clear ice which has already formed," revealed the Convair.

"What goes up must come down and during the winter months all of us are going to descend through not-so-nice weather only to be greeted on the far end by a skating rink someone decided to call a runway. Crews can make it easy on us by turning on adverse weather equipment before starting down and expediting descent through known or forecast icing conditions."

"Winter landings really raise my pucker coefficient," admitted one of the Starlifters. "Speaking of coefficients, I've seen some dramatic reductions in braking coefficients in past winters. So, I've got to rely more on my thrust reversers and aerodynamic drag from my spoilers. Landing distances are going to be longer and may be unpredictable if there is a lot of slop on the runway. Powdery snow scares me, especially when I reverse — instant IFR. Some pilots have a fetish about turning off the runway while still moving at a good clip. This is a good way to end up crunched in a snowbank."

"Some crews think their work is done when the wheels are chocked, but I've got news. Trapped water in fuel cells can freeze and may damage boost pumps and other fuel system components. Any of you ever spend a night without your protective covers in place — during a snowstorm? Makes for a real mess during preflight activities," emphasized one of the helicopters.

"Look, we can go on and on, but it's nearly dawn, gang. Speaking for everyone, we'll all make it through this winter if our flight and ground crews take the time now to thoroughly review our cold weather procedures in their respective Tech Orders and Dash Ones," the Galaxy concluded with a yawn.

"Fred, while you were on the phone, I stepped out for a few minutes to check the ramp. You're not going to believe this but I heard those aircraft talking to each other."

"Sure they were. And they just voted us a pay raise and cancelled winter for lack of interest. Look out there! There's nothin' but nine cold airplanes, a stiff north wind, and light snow falling."

"Aaacchoooo!"

"Got a cold comin' on?"

"No, Fred, why?"

"Didn't you just sneeze?"

"Nope."

"Well, somebody around here did."

FOWL

When our feathered friends but
out second best. But they can

Hunt them, watch them, keep them as pets, or stuff them as trophies — but, whatever you do, don't collide with one of them in flight. Birds are loved by many and hated by others. And human fliers, whether friend or foe of the feathered species, have a special interest in their avian counterparts because they're a hazard to flight.

Late summer and fall are the most dangerous times for bird strikes — and we're right in the middle of this period now.

USAF bird strikes tapered off slightly in 1973 from the previous year (Figure 1) due primarily to fewer flying hours and less low-level flying. Nevertheless, U.S. Air Force planes experienced two major and three minor accidents in 1973. For the second consecutive year, there were no fatalities or major injuries; unfortunately, bird strikes caused one fatality and two major injuries during the first six months of 1974.

The threat to both bird and machine on a collision course is obvious. Studies show that a four-pound bird colliding with an aircraft traveling at 600 knots will generate a force of 57 tons. MAC planes don't fly that fast, right? But here's something that'll make you swallow. At 300 knots that same bird will still pound you with a bone-jarring force of 14 tons — quite enough to severely damage you and your machine.

Migration Patterns

Most hits have occurred in the southern states with the lion's share occurring in the southwestern area of the country. Pick out your primary areas in Figure 2 and note the number of reports from 1973 by month. This may influence you to file an alternate route during certain times of the year. You can see the impact of flying in the fall — almost a third of the strikes occurred during September, October, and November. Combat Airlift Missions (CAM), or any low-level flying, is tougher during this period. About half of the strikes took place below 2,000 feet and half occurred near an airport.

Four major migratory highways wind their way across North America. You've probably seen them on maps before. They're commonly called the Atlantic, Mississippi, Central, and Pacific Flyaways. A billion birds will use these aerial routes this fall. There are also four concentrated areas where millions of birds congregate and sometimes appear as feathered flak for aircraft and man. One area lies around Lake Tahoe and down the Sacramento Valley. Another stretches down the Missouri River and along the Gulf Coast of Texas. A third area is the Mississippi River Valley and the south Louisiana marshes along the Gulf. And you can also expect in the fourth area — Chesapeake Bay, the Back Bay

Figure 1

World-wide Bird Strikes

	AF Total	MAC Total	AF Major Injury	MAC Major Injury	AF Fatal	MAC Fatal
1972	399	52	0	0	0	0
1973	356	28	0	0	0	0
1974*	175	16	2	0	1	0

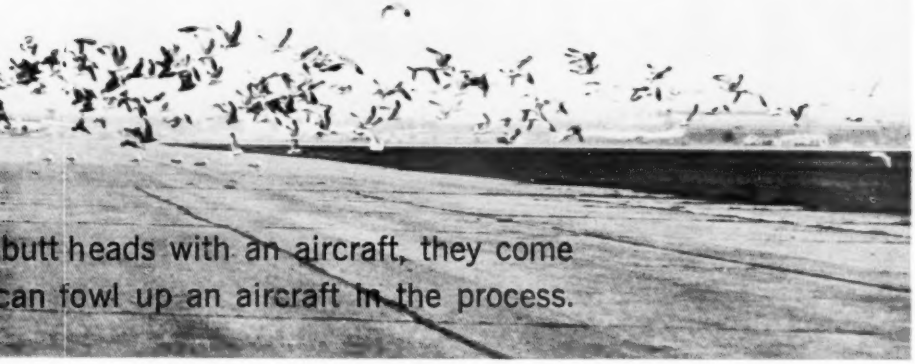
*Six months

MAC Bird Strikes by Aircraft Category

	Transports	Helicopters	Other
1972	47	5	0
1973	24	3	1
1974*	15	1	0

*Six months

L SKIES



butt heads with an aircraft, they come
can fowl up an aircraft in the process.

areas of Virginia, Currituck Sound, and the Lake Mattamuskeet area in North Carolina — large formations of these fliers without flight plans.

Avoiding Bird Strikes

Here are some pointers to alleviate the threat of possible encounters with flying fowl:

1. Learn about the birds in your operating area. If the mission allows, avoid the high concentration areas and altitudes.

2. Brief your crew on a prearranged plan of action to follow should a bird make shambles of your cockpit.

3. Scan the skies before takeoff and keep a sharp eye out during the traffic pattern. Your preoccupation with cockpit duties may prevent your spotting a bird which could red X your aircraft.

4. Keep the windshield heat on if your tech order recommends it. A warm, flexible windscreen is often able to take a greater blow than a cold one.

5. When you can't avoid bird areas, make sure your lights are on. Birds will attempt to avoid you if they see you. The potential collider will usually dive to avoid you so don't fly below formations.

6. Keep your airspeed as low as possible when in an area of numerous birds. This will allow a better chance for you and the bird to avoid each other.

7. Don't relax after you've climbed above a couple thousand feet. One pilot reported an encounter with a large bird at 21,000 feet, although the most common altitudes are below 10,000 feet.

8. For you rotorwingers, keep your helmet visors down if the mission permits. Your chances of sustaining injury will be much less in the event of windscreen penetration.

9. If you do have a mid-air, check your engine instruments. Your hungry jets may have ingested a beaked-one and could give you problems.

10. And keep the air traffic controller advised of your sightings. Your PIREP may benefit a buddy flying behind you.

Summary

As long as birds occupy the same airspace as aircraft, aviators will face the danger of colliding with them. Add such attractions as garbage dumps near runways and the hazards increase. Until some device is manufactured which gives warning of impending danger, or frightens birds away from the path of the aircraft, we will be faced with a see-and-be-seen situation. We can attempt to avoid the choice spots for feeding and watering, but we also need to know what to expect when the mission drives us right through the flock. The least you can do is know what to expect and take the action you feel necessary to keep from experiencing that sickening feeling accompanying the sight of an oncoming bird ready to mess up your day.

Figure 2

USAF CONUS Bird Strikes by Geographical Location and Month

Area	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
NE	—	1	5	—	5	1	3	1	7	1	3	1	28
SE	7	1	6	6	2	3	2	10	7	3	3	—	55
NW	3	—	1	3	3	2	2	1	5	3	1	2	26
SW	17	11	10	12	10	4	8	9	16	13	12	7	129

Source: USAF Bird Strike Summary (as of 4 Jan 74)

Tog and C

Spelling Out An Added Safety Factor

by Maj George D. Burgess
Associate Editor

If you're a member of an integral crew, you'll soon be training with the rest of your crew members both in the air and on the ground as individual training dates are realigned to fit into MAC's integral crew program.

The MAC aircrew training program is undergoing some far-reaching modifications of which training date realignment is only a part. Revamping of the flying currency program is another big change.

It's no secret to MAC Headquarters that when the integral crew system was implemented in January, some aircrew members greeted it with skepticism. There were hurdles to overcome before it caught hold. But, thanks primarily to aircrew members and their commanders, the system has picked up a great deal of support from some who were skeptical at its inception. It is succeeding as an improved management and safety tool.

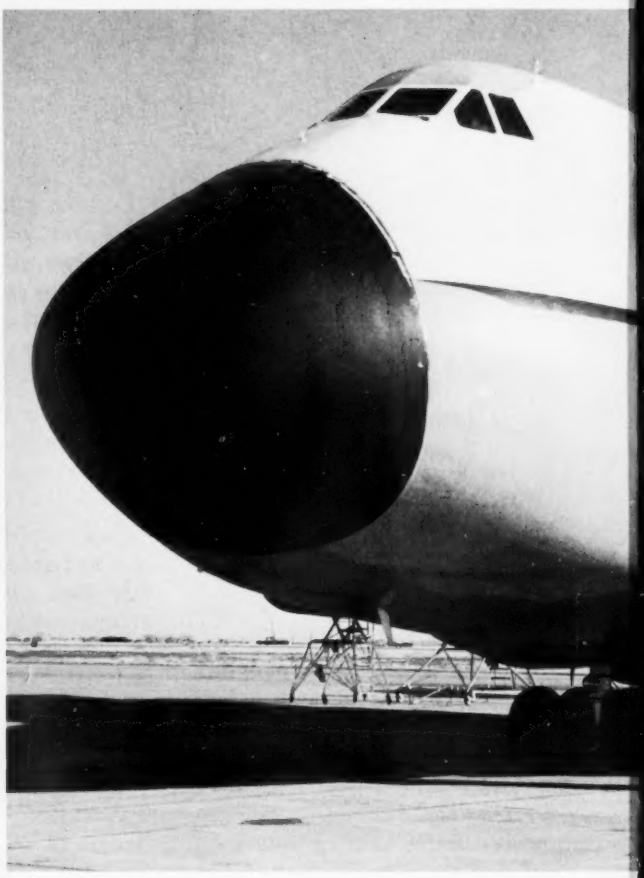
This realignment of training dates is a natural outgrowth of the integral crew system. If flying together as a single unit creates a higher degree of professionalism, then training together as a unit, logically, further improves a crew's effectiveness.

You've probably heard the term "crew currency reference date" applied to the new system. This date replaced the individual birth month for the accomplishment of some recurring requirements.

The old individual birth month reference remains for those crew members not assigned to a hard crew. The new reference aligns recurring ground and simulator by crew.

The change in the flying currency program was directed by the Air Force Chief of Staff. Currency requirements will now be expressed in terms of maneuvers, events, and sorties vice the old flying hour requirement.

This acknowledges that what a crew member does while he is flying is a more valid measure of his proficiency than how much flying time he logs. You'll hear more about this "frequency and recency of performance" as a means of maintaining your flying skills. But even though you will hear less about logging flying time for currency, flying time will still be important for upgrade requirements.



These revisions comprise an entirely new operational concept for MAC. The new program spells

;etherness in Air ;round Training

out who flies, when, and with whom. It integrates all ground and air training, based on maneuvers, events, and sorties, into the Integral Crew System. In doing so, the program streamlines crew management while it continues to emphasize proficiency and safety.

One reason for the recent emphasis on crew training and safety is that the modern, relatively trouble-free aircraft in MAC's inventory have created an ironical flight safety pattern. More mechanically sound than aircraft of the past, they are theoretically safer than any previous MAC aircraft. But when is the last time your crew actually shut down an engine? How were your procedures, knowledge, and execution?

A study by MAC Headquarters presented some interesting facts concerning engine shutdowns and in-flight incidents in MAC and civil airline planes. The study showed that the aircraft commander who flies an average of 50 hours per month in a C-141 or C-5 will shut down an engine once in 5.1 years. He will experience an in-flight emergency just once every two years. Based on the same flying time, the probability of an airline captain shutting down an engine is once every 2.8 years.

If you're a crew member on a Starlifter or Galaxy, these should be welcome statistics — although you could argue with them if you've already exceeded your "average" number of engine shutdowns. But they also show that aircrews are not gaining much actual experience responding to in-flight emergencies — experience they may need whenever that one big emergency comes along.

And that's one of the prime reasons for the drastic change in the program: integral crew training, based on maneuver (tasks and events) proficiency will better equip MAC crews to handle emergencies in a coordinated fashion that spells success. That's what the new proficiency program is all about.

These changes, together with a crew structure that provides equitable flight experience distribution, reinforce the MAC safety program. Crew member response supports the fact that the integral crew system has taken hold in MAC. Now, the name of the game is train the crew together — on the ground and in the air — for additional safety and efficiency.

What was it like to fly into Hanoi on Operation Homecoming? A C-141 aircraft commander tells his story.

The Hom

Memories of returning American Prisoners of War were rekindled recently when MAC aircrew members were awarded the Mackay Trophy for airlifting the prisoners from North Vietnam to the United States. History may record it as one of the most humanitarian efforts ever undertaken by a military organization. This is how the aircraft commander on one of the first C-141s to land in Hanoi recorded his part in this momentous event. Ed.

I was in college when our first Air Force pilots were captured by the North Vietnamese. The thought never entered my mind that a day would come when I would help return these men to the United States. But that day came on February 12, 1973, and I will never forget it.

"Operation Homecoming" would prove to be the most important airlift ever undertaken by the Military Airlift Command, and I was there.

Air Force personnel from Travis, Norton, and McChord Air Force Bases were assigned the primary function of returning the prisoners from Hanoi. The C-141 was the only medical evacuation aircraft equipped for the round trip to Hanoi from Clark AB in the Philippines without refueling. The three major bases sent the nucleus of a crew — a standardization pilot, navigator, engineer, and loadmaster. These crew members were later augmented by other highly qualified crew members from the normal stage at Clark. Accompanying me to Clark as the foundation of the group from 60th Military Airlift Wing, Travis AFB, were Lt Col Larry Rother, standardization navigator; MSgt Don Worrell, standardization engineer; and MSgt Jim Gullerson, standardization loadmaster. We were preceded at Clark by the crews from both Norton and McChord. For the next week we were involved in daily briefings, flights, and procedures. This, of all missions, was to be a safe and successful one. The most current information regarding the runway and the runway environment was presented to us in a series of photographs. Photo reconnaissance layouts were of such clarity and detail that I would later comment to myself on landing at Hanoi that I felt as if I had been there before.

The airfield was Gia Lam, located northeast of Hanoi. The runway was only 6,000 feet long and definitely not up to USAF standards. Landing would be further complicated by our heavy fuel load. We would not refuel at Hanoi, and this additional weight would increase our landing roll. The only approach available was an ADF approach incorporating a 90-degree turn over the runway, followed by a standard circling approach to land. Our other concerns were the monsoon weather and a dike, approximately 35 feet high, located about 1,500 feet from the end of the runway. We studied VFR maps of the area to familiarize ourselves with the surrounding terrain, and ascertained that the land was essentially flat from the coast up the Red River

by Capt Herbert D. Depp, 99 MAS, Andrews AFB, Md.

...mecoming

Valley to the airport. We felt confident that we could find Gia Lam even if the ceiling were down to 500 feet. We weren't certain whether we would be able to understand the tower controller, and vice versa. To avoid any mishap due to a possible language barrier, each crew was provided an Army interpreter. The interpreter studied the standard aeronautical terminology used by crews and control towers. He also served as expert for quick conversions from any metric system measurement to our U.S. system.

There were five different routes and route segments considered. The route that was ultimately chosen was the shortest one possible that would avoid an overflight of Hainan Island, controlled by the Peoples Republic of China. The operations plan forwarded by the North Vietnamese required an hour's separation between each aircraft. To provide this separation, and also to ensure that a spare aircraft would be in position in case of an in-flight breakdown, the first aircraft was scheduled for an 0800 takeoff and the second at 0810, the third at 0910, and the fourth at 1010. The first aircraft would proceed to Da Nang and then directly to Hanoi. The second was to orbit over Da Nang and wait until cleared to proceed. The third aircraft would do likewise. This plan would provide a smooth flow into Hanoi and provide a backup aircraft throughout the flight.

A brief pause and final instructions before launch.

Because of the gravity of this mission, radio communications were relayed through a satellite to keep voice transmissions constant and clear. From the command post at 22d Air Force, Major General John F. Gonge, airlift commander, remained in contact with each aircraft. Command and control required a running account of all activities in flight; therefore, a third pilot would occupy the jump seat and handle the high frequency communications.

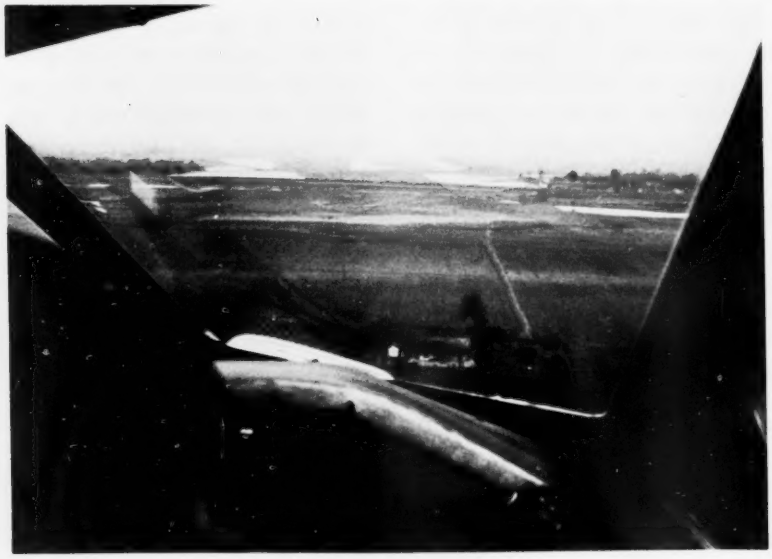
Throughout the week at Clark, configurations of the aircraft changed as various procedures were relayed to the Command Post. Final configuration was 40 seats and 40 litters as the condition of the prisoners was still unknown. Finally, on the night of February 11, we were told that the mission would depart the next morning.

Early that morning we reviewed what had been briefed the previous week. We filed a stopover flight plan to Hanoi. The weather was forecast to be good (by monsoon standards). We took another quick look at the aerial photographs. Then each aircraft commander spoke briefly to General Gonge, who emphasized the importance of the mission. The crews all knew what the mission would mean to the American prisoners waiting for us to land at Hanoi. I was the aircraft commander on the third plane, so I was in position to replace the second aircraft should it abort. The first two aircraft proceeded on time, and then it was our turn. We were on the runway ready for departure when the tower cleared us for takeoff and General Gonge released "Homecoming Air Evac 50236" on its most important flight.

Everything proceeded normally until the first aircraft had landed at Gia Lam. But releasing the prisoners was taking less time than anticipated, and the North Vietnamese wanted the aircraft interval reduced to a half hour. Since there was a backup for each aircraft, we were able to continue the mission according to the new schedule. This deleted the orbit at Da Nang and now we proceeded as a direct flight with no holding.

The radar worked beautifully as we flew up the coast and then to the mouth of the Red River. It was here that we planned to make initial contact with Gia Lam tower. We had heard conversation between the second aircraft and the tower and knew that we wouldn't need the interpreter. The tower controller's English was good, heavy with accent, but clearly understood. We asked for a lower altitude and received permission to descend from 28,000 feet to 12,000 feet. The tower operator at Gia Lam was not only talking to the three C-141s, but we were informed by our interpreter that we were being tracked on radar and our position reported to the tower.

The second aircraft was still on the ramp when we descended to 1,000 feet and broke out of the clouds. The half-sunken rice fields and green growth were directly below us. The briefings, pictures, and practice paid off handsomely as we identified Gia Lam Airport, forward and to the right. It was unmistakable — the 35-foot dike now loomed large. This was no dirt-filled dike. It was large enough to accommodate two busy lanes of traffic. The feeling of seeing this area after talking about it for so long and so intensely is nearly indescribable. The crew was still in a daze at the surrounding sights when Gia Lam tower called and, in English plain to everyone, told us not to stray west of the runway centerline. It was easy to see why. We were proceeding west now and directly in front of us lay the aftermath of heavy bombing. The devastation was awesome. Feelings that we had subdued were now resurfacing. We really were landing at Hanoi and returning prisoners of war.



Gia Lam at twelve o'clock.

The timing was perfect. We turned north and flew directly over the runway. The second aircraft was still on the ground but ready to take off in the opposite direction when we entered a right downwind. On final our position over the dike was evident in sudden radar altimeter readings. And before the full impact of our foreign location hit us, we were on the runway.

As we made a 180-degree turn on the runway, we noticed two camouflaged buses next to one of the hangars. We taxied to the ramp and spotted the Vietnamese marshaller. Standing directly behind him was a member of our advance team, giving us the more familiar marshalling signals. We followed his directions. Just after we shut down the engines, two buses pulled around the hangar and into view about 75 feet in front of us.

It is easy to describe the scene, but difficult to express in words our thoughts. The entire setting was subdued: a flimsy parachute with a few desks underneath for the formal prisoner transfer; a hundred or so North Vietnamese walking casually throughout the area, a building similar to our base operations building, except for its pock-marked walls. And then, the reason for the mission — the soon-to-be former prisoners of war.

I'm sure the prisoners knew exactly how far they could go with their captors. They went every bit that far. They gave the thumbs up, waved slightly, smiled bravely,

and had a look in their eyes that went deep inside every one of us in the Starlifter cockpit. Every one of them must have mentally planned this day for a long time. One by one they stepped into the back of the aircraft, and in only a short 20 minutes we were ready to start the engines.

Shortly afterward, we were airborne and shouts from the back echoed forward. Our prisoners of war were going home. And they let it be known how they felt about it. In a few minutes the first few men moved forward to see what this "new" C-141 was all about. Some had seen it before, but many had only heard of it at the time of their capture. We had been instructed not to carry on lengthy conversations with the returnees for reasons that were predicated on their possible poor condition. But you couldn't avoid them and you didn't want to. It was all airplane talk.

We were proceeding south and Da Nang was in view when a man leaned over my shoulder and pointed to the ground south of the city. He said he had been shot down near there in 1965. I could almost guess his next question. "When did you join the service?" he asked.

"March, 1967," I replied.

He let out a loud roar that rang throughout the cockpit, slapped me on the back, and pointed out that I was still in college when he was shot down. There was very little I could say as I scanned the last six years of my life, realizing my accomplishments and failures and trying to understand what each of these men must feel after such an ordeal. We talked more about the C-141, and then more former prisoners visited the cockpit.

Final few steps to freedom.

Each of us crew members eventually visited the passenger compartment to witness a sight that we shall never forget. We could hardly believe from the way they behaved that these happy men had been prisoners just a few hours earlier, some of them for as long as eight years.

I was fortunate enough to return to Hanoi for other missions on February 12 and March 4. "Operation Homecoming" was the most gratifying mission of my Air Force career. I doubt whether I'll ever again experience such a feeling as I had while standing near the crew entrance door on the C-141 at Clark AB as these former prisoners were being introduced to the welcoming crowd.

Our MAC crews knew the mission had been a success. Our passengers knew it. And so did the rest of the world.

ABOUT THE AUTHOR

Captain Depp graduated from California State University at Fresno, Calif., in 1966, majoring in geology. He was commissioned through OTS and completed undergraduate pilot training in 1968. Since then, Captain Depp has flown C-141s at McChord and Travis AFBs and C-7 Caribous in Southeast Asia. He is currently a VC-140 aircraft commander with the 99 MAS, Andrews AFB, Md.

A frosty martini glass is one of C. R.'s favorite delights. But frozen condensation on a Convair catches the Master Mixologist without his swizzle stick.

Sergeant Torque, my good man, cease your tap dancing on the wing of our silver-coated Convair. Time's awastin' and warmer climes beckon. In short, let's kick the tires and light the fires."

Sgt Torque eased his way down the steps of the maintenance stand, shaking his head as he approached his skipper.

"Sir, the frost is pretty thick on the wing. I'll call for deicing equipment and we'll have the bird ready to go in a few minutes." Sgt Torque's disconcerting announcement sent C. R.'s bulky form lumbering up the maintenance stand from where he peered down onto a frosty surface.

"Ha, nothing to worry about," the Rotund One assured. "Seen more frost than that on a martini glass. Rest assured, the engine heat will melt it before we get airborne, m'lad. But make yourself a snow cone out of it and maybe it'll cool you off, heh, heh."

Grumbling audibly, Sgt Torque was shoving away the maintenance stand when the SOF vehicle pulled up and Long Suffering Sam sprang out with navigation kit and aircraft commander folder in hand.

"Hi, boss," greeted Sam, "the weatherman said no sweat leaving out of here. We'll have light icing on climbout and a 500-foot ceiling, though."

"Whaaaaat!" puffed C. R., his hot breath boiling up volcano-like upon contact with the cold air — "a 500-foot ceiling! Look at those clear skies, Sammy boy. Does that look like a 500-foot ceiling? These weather weenies are forecasting for self-preservation again."

Sam moved timidly up the crew entrance ladder, suspecting he was about to assume his familiar role as the object of C. R.'s lecture.

"Takes a lot of savvy to deal with the weather soothsayers, Sammy. They try to snow you young guys with all their mumbo jumbo. Remember, meteorology is a very inexact science. They might as well use crystal balls to do their thing."

Defeated, Sam slumped into the copilot seat. C. R. strained and grunted in search of his shoulder straps and in a few minutes the crew had worked their way through the checklists and the bird was taxiing onto the runway.

C. R. whistled as he taxied. The flight to Norton was scheduled to arrive at a good hour. The crew would RON there, leave the following day, and spend the second night at Las Vegas. C. R. whistled loudly as he envisioned the merriments of a Las Vegas crew rest.

"Sir, the briefing?" reminded Sam.

Sam's interruption jolted the Suave One back to earth, his daydreams momentarily dispelled.

"Oh, er, I was waiting to get lined up here. This will be a normal takeoff. Any questions?"

Sgt Torque shook his head negatively as Sam eyed the figures on the performance data card, grabbed the clearance, and held it up for his aircraft commander to see. It had been a while since he had flown with the Ace of Aerospace, but he recalled C. R.'s briefing style.

"Ah, yes, and a right turn to 240 degrees, climbing to 3,100 feet," C. R. conceded, anxious to get the flight underway.

Advancing the throttles, C. R. released the brakes and the aircraft lunged forward. As the airspeed indicator passed refusal speed, Sam called, "Go!" But nothing happened. He glanced at his aircraft commander. "Go," repeated the copilot, louder this time. Still, the Convair hugged the runway.

C. R. looked at Sam who was in the midst of a hard swallow. The Master Manipulator was manipulating the yoke back and forth for all it was worth. Still, nothing happened.

"Abort," shouted Sam, his pasty countenance working in concert with the wide eyes of Sgt Torque. Suddenly, as the airspeed indicator approached 140 knots, the aircraft lurched into the air. His mouth wide open and eyes bulging, C. R. clutched the yoke.

"What's going on!" the Fearless One cried out to no one in particular. "Something's holding us back."

"Might be that frosty martini on the wing," chided Sgt Torque in frantic humor. "The performance instruments look good and you have plenty of power."

"Go back and take a look at the wings and see," croaked C. R. as the plane struggled through 150 feet. "No real problem, of course, but just as a precaution. Got the anti-ice equipment on, Sammy, old boy?"

"Captain," said Sgt Torque as he unstrapped, "if you'll monitor the temperatures and gages, I'll go back and take a look at the flight control surfaces."

"I'll get the gear up, Sir," reminded Sam as the terrain flashed by, perilously close. "That might help some."

"Er, gear up," directed C. R., "and don't bother with those bloody gages. That's Sgt Torque's job. Yours is to tune in the ADF so we can have some music up front."

The controls still felt heavy, but C. R. engaged the autopilot and was soon feeling at ease, in spite of the plane's 200 foot per minute rate of climb. Meanwhile, Sgt Torque was peering out of the cabin window at the frosty wings.

"Wha—whaa's that," exclaimed the Bold One as number two suddenly sputtered and its r.p.m. surged.

"We're losing number two," shouted Sammy as the R-2800 managed one more sputter and quit.

"Feather number one engine," ordered C. R.

"Sir, it's number two propeller, not number one," corrected Sammy in self-defense.

"Feather it, then," sang out C. R.

Sam feathered the propeller and completed his portion of the checklist. He was requesting return to the base just as Sgt Torque lunged into the cockpit.

"What's going on!" the mechanic cried out, mentally chastising himself for leaving the security of the cockpit.

"Engine failure, number two," explained C. R. "Going back in. Never fear, m'lads, I'll handle everything. And don't tell me this engine failure was caused by frost on the wing."

"No, sir. Most of the frost is gone from the wing, but there's still a trace. I can't understand that engine going that way. Everything looked good on takeoff."

"Merely a characteristic of these ancient beasts," sneered C. R. as the aircraft, now free of its impeding frost, wallowed on downwind leg, just 500 feet above the terrain and barely below the clouds. "Sgt Torque, advise the passengers that we're returning."

Sgt Torque was making the announcement when, suddenly, the crew's leader bolted upright in his seat. Number one engine was coughing ominously. One down and only one to go, thought C. R. Where did I go wrong?

Sgt Torque glanced quickly at the performance instruments, dropped the hand mike, and pulled the carburetor heat handle back to the full hot position.

"We nearly lost number one," advised the mechanic in a near whisper. "Carburetor ice. Look at that temperature." Sgt Torque silently vowed to keep his attention riveted on the instrument panel for the rest of this flight.

"I was just about to suggest that we get more carburetor heat on," the Airways Ace revealed, "and Sammy, you're going to have to help Sgt Torque watch those gages. You guys can't expect me to do it all, you know."

C.R. TERROR

Flying at 500 feet above the ground and just skirting beneath the clouds, the Convair staggered along with max power applied to its remaining engine.

"Sammy, old buddy, communicate to approach control that we no longer require their assistance. Suffice to say, I shall make a VFR approach and expedite our arrival."

"But, Sir, the ceiling is 500 feet and we might get in the weather again. Don't you think we should stay with GCA for an approach?" protested Sammy.

"Nope. You gotta learn to improvise, Sammy, or you'll have a hard time upgrading. Gear down, before landing checklist," commanded the unflappable C. R., basking in the glory of one operating engine and a runway that was not yet in sight.

As the gear dropped into place, the Master Manipulator found himself suddenly in the clouds. He nosed the aircraft down and smiled as the airspeed indicator reached an abundant 150 knots.

Out of the weather now and on base leg at 300 feet, C. R. was smiling victoriously and Sammy was about to congratulate his boss for handling the situation so skillfully when he noticed the airspeed. It was 10 knots below block airspeed and dropping.

C. R. shoved the throttle forward. The Convair was sinking dangerously low on glide path — and still three miles to go. C. R. pulled up the nose and the airspeed decreased further. Like a dog chasing his tail, C. R. increased the rate of descent to regain the lost speed.

"Sir, we're awfully low," gulped Sammy, looking down at the waving children below. "Want to get the gear up?"

"Naw. Got it made now," C. R. assured his apprehensive crew members. "Props, highlights, flaps 39 degrees."

C. R.'s visions of a hero's welcome was interrupted by the Convair's prestall buffet. With the approach lights just coming up, C. R. was still hopeful of at least a friendly reception when he heard several thumping sounds. His face now bathed in sweat, the besieged pilot fought to keep the stalling aircraft under control. It passed over the approach lights and banged down hard on the overrun.

* * * * *

"I see. Nothing at all? What! No, Colonel Brushwar, I'll get back to you later. Let me know if you find anything else." Col Steels, the wing commander, swung his swivel chair around to face a somewhat deflated C. R. Terror.

"Major Terror, have you ever heard of carburetor ice?" the Colonel asked in an unnaturally calm voice.

"Sir? Ah, er, yes, Sir. Matter of fact, without my in-depth knowledge of same, we probably would have lost a second engine up there today. But what could one expect, with my experience and all. I . . . "

"Major Terror, I am trying to tell you that you shut down a perfectly good engine," shouted the Colonel, irritated now. "Not only that, you took off with frost on the aircraft, illegally cancelled IFR, tried to fly under the clouds, and ended up with a half acre of tree limbs imbedded in your airplane. And the gear is sprung so badly that the plane looks more like a pregnant penguin than a Convair. Your procedures were rotten and your judgment nonexistent. Now, get out of here before I really lose my temper!"

A dejected C. R., his eyes cast downward in uncharacteristic gloom, waddled slowly out of the Headquarters building. A screech of automobile tires got his attention and he looked up to see Darlene Dollie, a new nurse on base, motion to him from her parked Fiat.

"Major Terror, I've been looking for you," purred the blonde captain, "I heard about your misfortune and thought you might need a little comfort."

The Airway Lothario perked up and quickly deposited his bulk into the front seat of the little car. "A friend in need is what you are, my little one. Actually, I was just discussing the art of cold weather flying with the wing commander, but I am definitely off duty, now."

"How nice," replied the blonde, reaching into the back seat. C. R. watched as she brought forth a frosty glass brimming with white liquid and topped with an olive.

"I thought perhaps you could use a martini," she offered. "See, the glass is still frosty."

C. R.'s smile drooped and was replaced by a sickly half grin.

"Ah, if it's all the same, m'dear, I believe that for this once I would prefer a scotch and water. And, er, no ice, please."

Global Notes

Capt Robert E. Whitehouse, 301 MAS (Associate), Travis AFB, Calif., has received the MAC Distinguished Individual Safety Award for a successful emergency landing on a foam-covered runway with his C-5's nose gear retracted.

After taking off, the gear was retracted but the nose gear remained "red wheels" and the gear handle warning light remained on. Capt Whitehouse initiated in-flight troubleshooting procedures to fully retract the nose gear; however, these were unsuccessful. He then elected to return to Travis, notified the Operations Center, and began emergency extension procedures. The main gear extended normally but the nose gear remained "red wheels." Further extension attempts failed and Capt Whitehouse requested technical guidance via "Conference Skyhook." Headquarters MAC, Lockheed-Georgia, and 60 MAW standardization personnel passed along technical information and alternate procedures, but the nose gear remained canted aft at 45 degrees.

Capt Whitehouse flew a visual pattern, using VASI for vertical guidance. Touching down 1,500 feet down the runway, he lowered the nose into the foam at 3,000 feet and the nose gear slowly retracted. The aircraft slid 500 feet before stopping 6,500 feet from the approach end. Capt Whitehouse's flying skill minimized damage and prevented a possible accident when the nose gear collapsed.

ARRS Pararescue Team Wins

A pararescue team from the 1550 ATTW, Hill AFB, Utah, has won the third annual International Pararescue Competition held at Trenton, Ontario, Canada. Canadian and American teams competed in accuracy events consisting of parachuting, cargo parabundling, and cargo free falling. Place standings and scoring seesawed until the final day, at which time the 1550 ATTW team pulled ahead into first place where it remained to win the Allison Trophy. In addition, SSgt Joseph Stanaland and SSgt Mike Gallagher of the 1550th took first and second places in the individual parachuting accuracy events.

personnel changes

Marilyn A. Witkus, managing editor of THE MAC FLYER for the past four and one-half years, retired in August after 25 years of federal service.

Mrs. Witkus spent most of her 25 years in the MAC Safety Directorate. In addition to her duties on the magazine, she also administered the MAC Safety Awards Program. In ceremonies held shortly before her retirement, she was presented a MAC Distinguished Individual Safety Award by Brig Gen John H. Germeraad, MAC Inspector General. A set of bound volumes of THE MAC FLYER was presented to her by Lt Col John W. Ray, Supervising Editor.

Mrs. Witkus and Lt Col Ray

Replacing Mrs. Witkus in the MAC Safety Education and Awards Division is Mrs. Isobel M. Bryant. Mrs. Bryant comes to THE MAC FLYER from the Office of MAC History where she served as editorial assistant for more than three years.

Mrs. Bryant

Quick Stoppers

The Gages are Busted...

Passing 12,000 feet during climbout, the crew of a four-engine jet noticed that number four engine instruments were reading higher than instruments of the other engines. The pilot varied throttle position but the abnormal engine indications persisted. Aircraft control response appeared normal. Suspecting multiple gage failure, the crew continued the mission.

Nearing the end of the flight, the aircraft required an abnormal amount of right aileron and rudder trim to offset a left rolling tendency. During landing rollout, this reaction, plus slow aircraft deceleration, created a few tense moments for the crew. To stop the aircraft, the pilot shut down the inboard engines, applied heavy braking, and corrected heavily on the nose wheel steering to counteract the drift. Slowing to a safe taxi speed, the aircraft cleared the runway and the crew shut the bird down at the first parking spot.

Investigators found the cause of the malfunction — number four fuel control had failed, causing engine r.p.m. to automatically stabilize at 90 percent. Since the other engines were operating at cruise power settings, the crew failed to detect any aircraft problem until descent. Investigators also found 2,000 pounds less fuel in the number four main tank which explained the control problem.

This crew got off relatively easy — two nose wheel tires and two main gear brake changes.

Explosion in the Pattern

During level off at 5,000 feet on a local training flight, the crew of a four-engine jet puckered as a loud explosion shook the aircraft. Observing smoke pouring from the latrine area, the aircraft commander ordered everyone on oxygen and declared an emergency. Scanning back in the latrine area, the crew found the cause of all the smoke — an exploded battery. Smoke subsided after the battery charging circuit breakers were opened and the aircraft landed without any further surprises.

Investigators found that the wrong type of rubber gasket had been installed during tech order modification of the battery. The gasket had plugged up the battery ventilation ports.

Toxic Flares

Aside from the obvious fire danger, a decoy flare inadvertently discharged within an aircraft or other confined areas may emit toxic fumes. When fired, burning flare components of polyethylene and magnesium break down into the combustion by-products of carbonyl fluoride and perfluroisobutylene (teflon). These emissions may produce influenza-like symptoms such as metal fume fever and/or polymer fume fever and, even more dangerous, pulmonary edema (fluid in the lungs). Although no human fatalities have resulted from such exposures, experiments with animals have produced mortality through toxicity. Those who fly aircraft equipped with flares might be wise to have respiratory protection equipment readily available in the event of a "short round."

Lame Sabreliner

Sabreliner drivers have their work cut out when runways are wet and crosswinds are blowing. But one T-39 jock had a time of it on a dry one recently.

As the T-39 touched down, the right main gear strut fully compressed and the lame bird darted off toward the right. Applying left rudder, the pilot attempted to engage nose wheel steering, but it failed to engage. Running out of ideas and concrete, he attempted differential braking with emergency brakes selected. As he depressed the uneven rudder pedals for directional control and braking, both wheels locked and the bird skidded into the grass. The tires held up and the only thing damaged was the pilot's pride.

Emergency procedures for maintaining directional control with normal or emergency braking during complete loss of nose wheel steering are lacking, but AFLC and the makers of the T-39 have been requested to develop some Dash One guidance.

Raining Gear

The C-5 roared upward after takeoff, but at approximately 300 feet a wheel on the left aft main landing gear separated from its axle and plummeted to the runway. The tire bounced about 150 feet into the air and then came to rest on the side of the runway. The pilot made a safe landing at destination, minus a full set of rubber.

Maintenance had been performed on the wheel assembly and investigators believe the retainer nut was torqued to 300 p.s.i. clockwise — instead of the same amount in a counterclockwise direction. This mispositioned the retainer nut tabs and allowed the nut to back off during taxi-out. So when the jumbo jet lifted off the runway, the spinning tire finished wrenching off the nut and the wheel promptly returned to base.

Watch the Store

A report from an airline captain underlines the need for continuous monitoring of cockpit instruments, especially when the autopilot is engaged.

Cruising clean at 180 knots with the autopilot engaged and altitude and nav hold functions selected, the captain checked a defect in the aircraft pressurization system. While the captain focused his attention on the malfunction, the airliner smoothly rolled into a 45-degree left bank that continued to increase rapidly. Rate of descent increased to 2,000 feet per minute and the aircraft turned 60 degrees. The copilot alerted the captain before the unusual attitude became disastrous. The captain immediately recovered and leveled off approximately 800 feet lower than his assigned altitude.

Later, the captain stated that the most alarming aspect of the incident was the speed of entry and the lack of G-effect that normally would have alerted him to an attitude change.

Under such circumstances the pilot watching the store should take immediate action to regain aircraft control by disengaging the autopilot and maintaining aircraft control until such time as the aircraft commander or captain is in a position to take over.

— Adapted from
FLIGHT SAFETY FOCUS

QS

Scratch One

After having completed isochronal inspection, maintenance troops were checking the C-5 for return to operational service. An engine fuel manifold TCTO had been completed during the inspection and a maintenance leak check was required on all engines.

During their pre-engine run check, maintenance personnel detected a fuel manifold leak at a B-nut connection. A mechanic eliminated all evidence of the leak by cinching the B-nut with his trusty torque wrench. Cowlings were buttoned up, areas cleared and operational engine runs were begun.

The four TF-39s thundered and howled but in the cockpit vertical N2 r.p.m. tapes silently stabilized at 90 percent. As the engine run crew retarded the four throttles, they heard a loud bang and the outside scanner reported a ball of flame coming from number three tailpipe. Since there were no abnormal cockpit engine indications or illuminated warning lights, the engine run crew suspected a compressor stall. Checking this possibility, they advanced number three to 85 percent N2. As engine revolutions leveled off at 85 percent, number three overheat light illuminated. The crew immediately retarded the throttle to idle and began engine shutdown procedures. But before they got very far, the fire light came on and the scanner reported that the engine was enveloped in flames. The crew pulled the affected fire control handle and activated the primary extinguisher bottle. Fire indications persisted, so they discharged the secondary bottle. That did the trick.

Maintenance soon found the source of the acute engine heartburn — improper torque on the aforemention B-nut had caused the fuel leak.

Nomex Scores

A Navy fighter jock recently put his Nomex flight suit to an unusual fiery test. After completing a bombs/rocket training mission, the pilot was postflighting his F-8 when a hung 2.75 inch rocket accidently fired. The flaming rocket exhaust struck his shoulder and knocked him to the deck. Aside from a bad case of ringing ears, his only injury was a minor shoulder burn. The flight surgeon noted that the pilot's Nomex flight suit prevented a probable severe burn.

— U.S. Naval Safety Center, Weekly Summary

Incapacited Instructor

Shortly after level-off at FL 290, the instructor navigator felt a hot flash across his forehead. This was followed by a pain in the back which moved upward and finally centered in the left front shoulder. Cabin altitude checked out normal at 5,000 feet. The mission was aborted and the nav was taken to the flight surgeon. Although there were some mild symptoms of the bends, the 5,000-foot cabin altitude made this probability unlikely. The man underwent further observation but the cause of his pains hadn't been determined.

The unusual and unexpected is one thing you train for during physiological training — a good argument for getting all you can from each training session.

after deadline . . .

FRAYED CONTROL CABLES -- You T-39 drivers should be on the lookout for sluggish or erratic aileron movements. If you do encounter such aileron response, get the bird on the deck right away. One T-39 crew on a local proficiency check recently experienced erratic control column movements during steep turns. In-flight troubleshooting revealed the problem was in the ailerons and the symptoms showed up during turns requiring more than one and one half G's. The crew returned to base, where maintenance personnel found four strands of a seven-strand aileron cable had failed at a pulley.

An Air Logistics Center confirmed that cable failures have been a problem in the past and that a new cable has been developed and procured. New aileron cables are flowing into supply channels and T-39 aircraft are being retrofitted with these improved cables as they become available. But until fleet-wide retrofit is completed, T-39 ground and flight crews should be alert to any strange aileron hangups.

HELICOPTER STROBES -- Under evaluation at the Warner Robins Air Logistics Center are specifications for a high intensity strobe light for use on MAC helicopters as an anti-mid-air collision device.

Aeronautical Systems Division has approved an Army strobe light for use on Air Force helicopters and recommended to Warner Robins ALC that high intensity strobe lights be procured for all MAC helicopters. Action is expected by the end of November. If approved, the strobe light modification could be completed on MAC birds by the end of next year.

The mid-air collision threat prompted Headquarters USAF to direct MAC, ATC, and SAC to conduct strobe light tests using T-37, T-38, T-39, B-52, C-141, FB-111, and KC-135 aircraft as test vehicles. The helicopter strobe light program is a near term solution for slower aircraft.

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Touch and Go

"I KNEW CREW TRANSPORT WAS BAD BUT THIS IS RIDICULOUS!"
BILLETING OFFICE